

- 2a. Umbelas con 10 a 15 flores, pedicelos pubescentes, folíolos 3-lobados, con el margen inciso-lobulado y mucronado.
 *H. apolobambensis*
- 2b. Umbelas 30 a 40 flores, pedicelos glabros, folíolos lanceolado-cuneados, con el margen inciso-dentado. *H. palmata*

Paratipos. BOLIVIA. **Dpto. La Paz:** Prov. Franz Tamayo, Área Natural de Manejo Integrado Apolobamba, Keara Viejo, al lado del Río que baja del Sur, 14°42'55"S, 69°04'58"W, 3360 m, 2 jun. 2005, A. Fuentes & E. Cuevas 8602 (LPB, MO); Senda Pelechuco-Moxos, sector Tambo Quemado, 15 minutos hacia abajo del campamento siguiendo la senda, 14°41'17"S, 68°58'35"W, 3464 m, 12 may. 2003, N. Paniagua, A. Araujo, H. Cabrera, R. Alvarez, A. Alvarez y L. Mamani 5748 (LPB). PERU. **Dpto. Cusco:** Prov. La Convención, Distrito Huaycopata, sector San Luis, 13°04'22"S, 72°22'54"W, 2995–3504 m, 24 nov. 2006, L. Valenzuela, J. Farfan & E. Suelli 8106 (MO).

Nota. En etapa de impresión del presente artículo, durante una visita de M. Mendoza al Missouri Botanical Garden (MO) en junio del 2010, revisando material de proyectos en ejecución de Perú, identifica la colecta de L. Valenzuela 8106 como *Hydrocotyle apolobambensis*, este nuevo registro extiende su distribución a Bolivia y Perú, confirmado así lo estimado por los autores al señalar: “pero dada su cercanía y la similitud de formaciones tanto geológicas como de ecosistemas con el Perú, es posible que la especie se encuentre también en este país.”

Agradecimientos. Al personal del proyecto Madidi del Herbario Nacional de Bolivia (LPB) y del Missouri

Botanical Garden (MO) en Bolivia, quienes colectaron por primera vez especímenes de esta especie. A Michael Nee (NY) que proporcionó información del material tipo de *Hydrocotyle minutifolia* y por sus acertadas recomendaciones en la revisión del presente artículo. La ayuda y sugerencias de John Wood (FHO, K) y de Peter Jørgensen (MO), y a Don Carlos Maldonado por la elaboración de la ilustración.

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A New Species of *Plantago* (Plantaginaceae) from Iran

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ABSTRACT. A new species, *Plantago orzuiensis* Mohsenz., Nazeri & Mirtadz. (Plantaginaceae), belonging to *Plantago* L. subg. *Albicans* Rahn, is described from Kerman Province in southeastern Iran. Its relationships to the closely related species *P. ciliata* Desf., *P. amplexicaulis* Cav., *P. lagocephala* Bunge, and *P. psammophila* Agnew & Chal.-Kabi are discussed. The most prominent features of the new species are the amplexicaul leaves; bracts that are to 6 mm long, boat-shaped, with a pilose midrib and ciliate margins; and hirsute corolla lobes to 2.5 mm long.

Key words: Iran, IUCN Red List, Kerman Province, Plantaginaceae, *Plantago*.

During investigation of the genus *Plantago* L. (Plantaginaceae) in Iran from fresh material as well as from dry specimens at the Kerman University Herbarium, one new species was found. The new species is characterized by its cylindrical spikes and by its sepals and boat-shaped bracts, both of which are pilose on the midrib and ciliate at the margins.

Plantago orzuiensis Mohsenz., Nazeri & Mirtadz., sp. nov. TYPE: Iran. Kerman Prov.: Orzuia, 1300 m, 10 May 2002, M. Mirtadzadini 1221 (holotype, Kerman University Herbarium). Figure 1.

Haec species *Plantagini amplexicauli* Cav., *P. ciliatae* Desf., *P. lagocephalae* Bunge et *P. psammophilae* Agnew & Chal.-Kabi subarcte affinis, sed a his tribus habitu caulescente, foliis amplexicaulibus atque bracteis fertilibus longioribus, ab illis tribus spica cylindrica, ab omnibus bracteis fertilibus cymbiformibus distinguitur.

Plants annual, ca. 27 cm tall; sterile stems unbranched, pubescent; internodes 1.8–2.5 cm; fertile stems ca. 10 cm. Leaves 8–10 × 0.5–1 cm, lanceolate, amplexicaul, pubescent, margins entire, nerves 7; petioles 5.5–7 cm. Spikes cylindrical, 3.5–7 cm; peduncle 12–17 cm (Fig. 1); fertile bracts boat-shaped, 5–6 × 2.8–3 mm, exceeding the sepals, acute, bract margins membranous and ciliate, keeled and pilose on midrib (Fig. 2A). Flowers with sepals ovate, 3.5–4 mm, asymmetric, pilose along midrib, ciliate at apex, margin membranous, anterior sepals

with narrower midrib, 0.5–0.75 mm, only ciliate at apex, posterior sepals with broader midrib, 1–1.5 mm, ciliate at apex as well as one lateral side (Fig. 2B); corolla tube glabrous, 2–2.5 mm, corolla lobes ovate, acuminate, hirsute, 2–2.5 × 1–1.2 mm (Fig. 2C); anthers winged at apex, the wing acuminate, russet, 1.1–1.25 mm (Fig. 2D). Seeds 2, 2.5–2.7 mm, brown with mucilaginous coating (Fig. 2E). Chromosome number: $2n = 30$ (Fig. 2F).

Distribution and habitat. *Plantago orzuiensis* was found at only one locality in Orzuia, in southern Kerman Province, Iran. Dozens of individuals were found at the type locality in dry sandy soils to 1300 m above sea level. This area is part of the Irano-Turanian phytogeographic region (Takhtajan, 1986), which is characterized by mean temperatures of 47°C (in the hottest month) and –10°C (in the coldest month) and a mean annual precipitation of 160 mm.

IUCN Red List category. *Plantago orzuiensis* has not yet been evaluated using IUCN Red List criteria (IUCN, 2001), although it is abundant at the collection site and produces many seeds. For now, its conservation status is estimated as Data Deficient (DD).

Cytology. Metaphasic chromosomes were obtained from root tips from seeds taken from the holotype collection. This revealed a somatic chromosome number of $2n = 30$, which is consistent with a previous count from *Plantago albicans* L., a member of subgenus *Albicans* Rahn, with a basic chromosome number of $x = 5$ (Badr & Elkholy, 1978).

Taxonomic notes. *Plantago orzuiensis* can be distinguished from closely related taxa by various characters. For example, *P. amplexicaulis* Cav. possesses conical spikes (vs. cylindrical ones in *P. orzuiensis*); the fertile bracts are ovate, glabrous, and not ciliate (vs. cymbiform, ciliate, with a pilose keel); the sepals are not ciliate (vs. ciliate); and the corolla lobes are glabrous (vs. hirsute). *Plantago ciliata* Desf. is a stemless plant (vs. stemmed in *P. orzuiensis*), with leaves not amplexicaul (vs. amplexicaul); the spikes are conical (vs. cylindrical); the fertile bracts are ovate and only 3–4 mm long (vs. cymbiform, and longer to

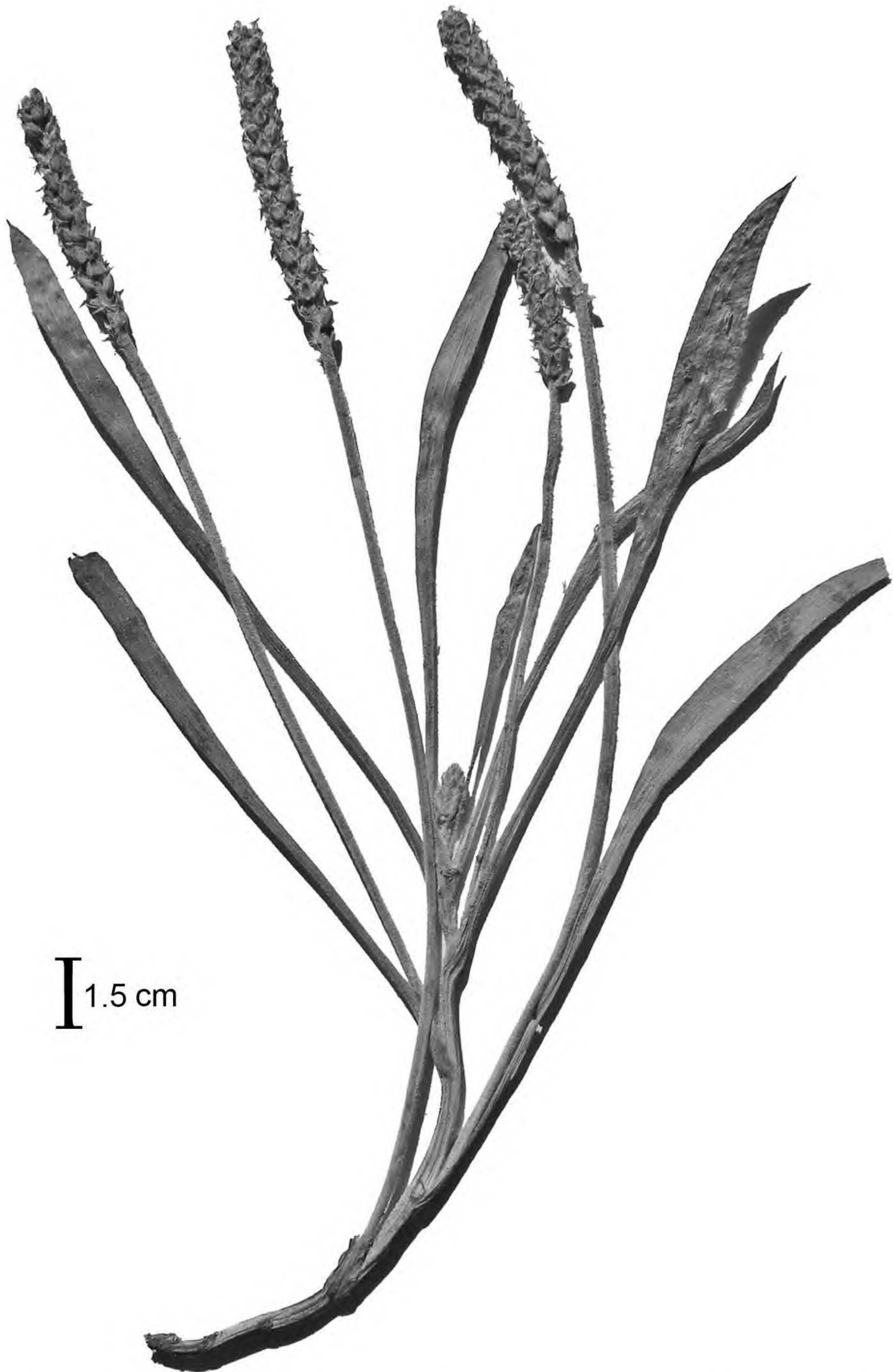


Figure 1. *Plantago orzuiensis* Mohsenz., Nazeri & Mirtadz. Holotype specimen, *Mirtadzadini 1221* (Kerman University Herbarium).

6 mm); and the corolla lobes are 1.5–2 mm long (vs. 2–2.5 mm). *Plantago lagocephala* Bunge is also a stemless plant (vs. stemmed) that lacks amplexicaul leaves and has conical spikes; its fertile bracts are ovate, not ciliate, and only 3 mm long (vs. cymbiform, ciliate, with

a pilose keel, to 6 mm); the sepals lack marginal cilia (vs. ciliate); and the corolla lobes are smaller, only to 1 mm (vs. 2–2.5 mm). *Plantago psammophila* Agnew & Chal.-Kabi is also stemless (vs. stemmed) (Patzak & Rechinger, 1965; Kazmi, 1974) with leaves not

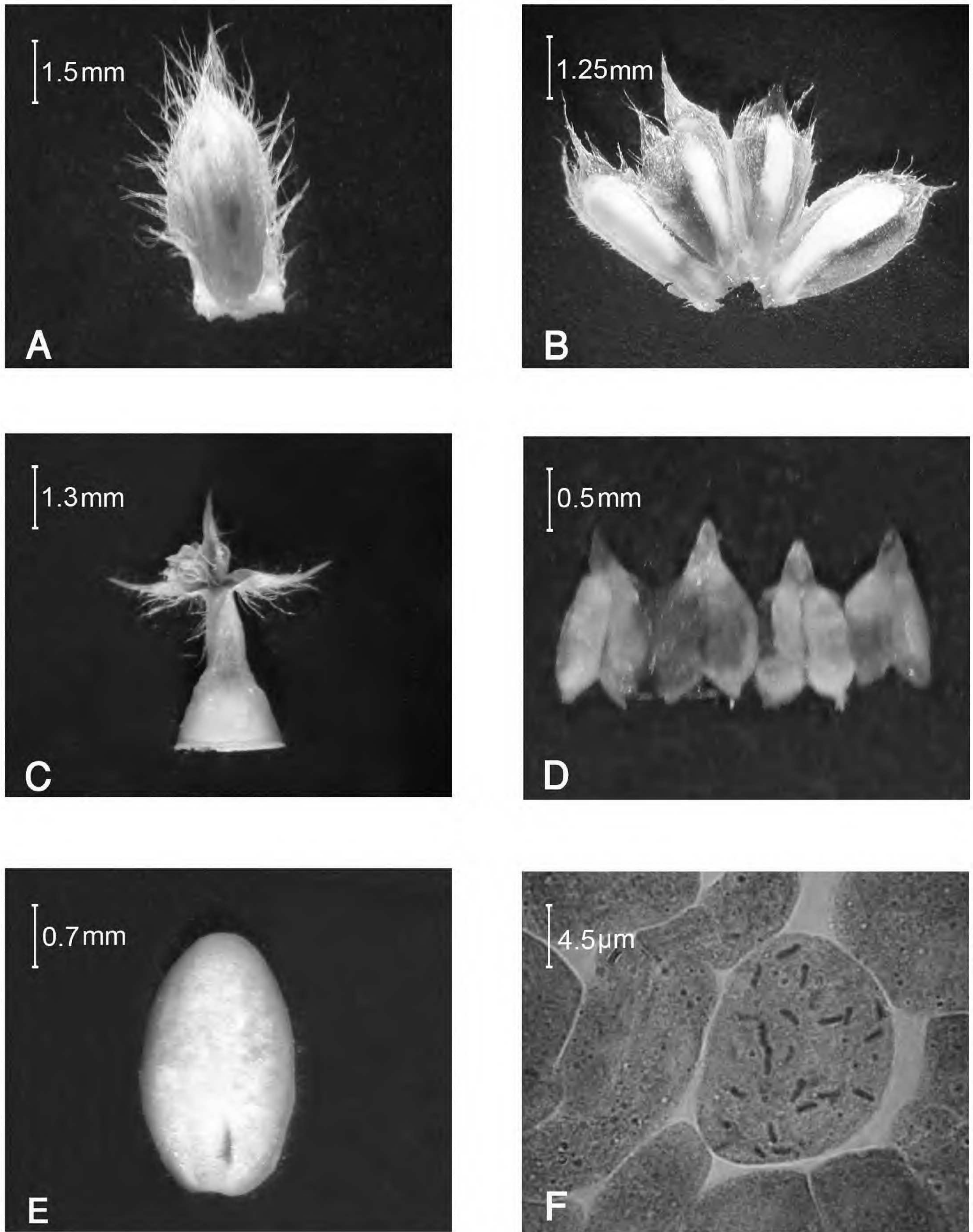


Figure 2. *Plantago orzuiensis* Mohsenz., Nazeri & Mirtadz. A–E. Structures obtained from the holotype, *Mirtadzadini 1221* (Kerman University Herbarium). —A. Bract. —B. Sepals. —C. Corolla. —D. Anthers. —E. Seed. —F. Metaphase chromosomes ($2n = 30$) obtained from roots of seeds from the holotype *Mirtadzadini 1221* (Kerman University Herbarium).

amplexicaul (vs. amplexicaul); the bracts are ovate, not ciliate, and only 4–5 mm long (vs. cymbiform, ciliate, with a pilose keel); and the corolla lobes are longer, ca. 3 mm long (vs. 2–2.5 mm).

Plantago orzuiensis is assigned to subgenus *Albicans* based on the lanceolate and villous leaves, the pubescent corolla limbs, the seeds with a longitudinal groove on the ventral side, the two